

10. and 11. male flower, different views, one more advanced than the other; 12. segments of the male flower separated; 13. anther; 14. pollen.

[*M. Polemanni* agrees with *M. Thomii* in most particulars, except such as are noted in the figures. The colour of its flowers is however very much brighter; that of the beards of its bracteæ a bright orange, the perianth carmine.—W. H. H.]

XLV.—On the *Synonymy of Passandra, with Descriptions of all the old and of a few new Species.* By EDWARD NEWMAN, F.L.S.

Class COLEOPTERA. Natural Order CUCUJITES.

Economy.—On this subject little appears to be known: from their depressed shape and their close resemblance to the true *Cucuji*, the *Passandræ* are supposed to be wood-feeding insects.

Geographical Distribution.—Gambia, Cape of Good Hope, Sumatra, Java, Carolina, Cuba, Brazil.

Authorities and Genera.—The genus *Passandra* was established by Dalman in the appendix to Schönherr's 'Synonymia Insectorum,' in the year 1817. The only species referred to the genus was *P. sexstriata*, an insect nearly as large as *Passalus cornutus*, and inhabiting Sierra Leone and some other parts of Africa. A second species was described by Mr. G. R. Gray in the English translation of Cuvier's 'Règne Animal.' A third species I described in the 'Entomological Magazine.'

Closely allied to *Passandra* of Dalman is a genus of my own characterized in the 'Entomological Magazine' under the name *Hectarthrum*, of which one species, *H. curtipes*, from Western Africa, is described.

Very nearly related to *Passandra* and *Hectarthrum* is a third genus, characterized by Mr. Westwood in the 'Zoological Journal' under the name of *Catogenus*, and by Perty in his account of the Annulosa of Brazil, collected by Spix and Martius, under the name of *Isonotus*. Mr. Westwood refers to the *Cucujus rufus* as his type, and M. Perty describes a

new species. To this genus belongs the *Anisocerus* of Hope*. The name *Catogenus* has the claim to priority.

Fabricius in the genus *Cucujus* describes four insects referrible to one or other of the above genera; but unfortunately, little anticipating the capture of several kindred species, he has not described them with sufficient accuracy to establish their identity without a comparison of specimens.

Did not these subdivisions exist I should scarcely be inclined to propose them; however, I think it better not to undo hastily what has been done with care. I shall not hesitate to employ them.

Genus *PASSANDRA*, *Dalman*.

Linear, depressed, and in habit somewhat resembling *Pas-salus*; head porrected, of nearly the same breadth as the prothorax, and having a deep transverse posterior furrow; eyes small, lateral, roundish, and but little prominent. The antennæ are 11-jointed, rather more than half the length of the body, and inserted near the base of the mandibles; the 1st joint is stout and obovate, the second short and almost spherical, the remainder are nearly equal, obconic, rather compressed, and each produced at its apex interiorly; the last joint is larger than the rest, more compressed and obliquely truncate. The head is impressed posteriorly by a very deep transverse furrow. The tarsi are 5-jointed, but the basal joint is very short and nearly obsolete †.

Sp. 1. *Pass. sexstriata*. (Corp. long. 1·4 unc. lat. ·4 unc.)

„ „ Dalman, Schönherr's Syn. Ins. Appendix, p. 146.

Head, prothorax, femora, and entire underside obscure red, the other parts black and shining. The head has a deep transverse furrow parallel to the anterior margin of the prothorax; at each posterior angle of the head this is joined by a longitu-

* But not *Isocerus* of Illiger as quoted by Mr. Westwood in the 'Zoological Journal,' and by the Count Dejean in his 'Catalogue des Coleoptères,' *Isocerus* being merely a synonym of *Parandra*.

† The instrumenta cibaria of each genus have been carefully and elaborately described by the author who has proposed it. I do not repeat them, finding the three descriptions nearly identical, having nothing additional to offer, and considering moreover that they are by no means essential to the object of this paper.

dinal marginal furrow which originates near the base of the antenna and passes above the eye; anteriorly the head has three deep impressions, of which the middle one occupies the clypeus, and the lateral ones are nearly approximate to it, but rather further back towards the crown of the head. The prothorax has a posterior and marginal lateral ridge which is produced on each side the head; dorsally, rather behind the middle, it had two obscure impressions. Each elytron has three longitudinal furrows; the 1st is deep, near the suture, originating by the side of the scutellum and extending to the apex; the second also deep, originating dorsally near the shoulder, but ceasing considerably before the apex; the third is vague and shallow, originating laterally considerably below the shoulder, passing round the termination of the second and ceasing near the apex.

Inhabits Sierra Leone. A single specimen obligingly lent me for description is in the cabinet of the Rev. F. W. Hope. A very lengthened, minute and accurate description of this insect by Dalman will be found in the Appendix to Schönherr's *Synonymia Insectorum*, p. 146.

Sp. 2. *Pass. Columbus*. (Corp. long. 1·2 unc.; lat ·325 unc.)
 „ „ Newman, 'Entomological Magazine,'
 vol. v. p. 398.

Pitchy black, shining, with an obscure longitudinal stripe of red on each elytron. The head has a deep transverse furrow nearly parallel to the anterior margin of the prothorax; at each posterior angle of the head this is joined by a longitudinal marginal furrow, which originates near the mandibles, curves outwards to the base of the antenna, and passes above the eye; anteriorly the head has one deep impression occupying the clypeus, and on each side of this a vague and diffuse linear impression extends from each mandible to the great transverse furrow. The prothorax has a posterior and lateral marginal ridge which is acutely produced on each side of the head; dorsally it has two abbreviated furrows, originating almost close to the anterior margin and ceasing at about two thirds of the entire length of the prothorax; these furrows are very distant and considerably nearer the lateral margins than the

centre of the prothorax. Each elytron has two deep longitudinal furrows, the first originating by the side of the scutellum and extending to the apex; the second originating dorsally near the shoulder and terminating considerably before the apex; exterior to this furrow are several ill-defined and inconstant linear impressions.

Inhabits Brazil. A single specimen (from which the description is taken) is in the cabinet of the Entomological Club; a second is in that of the Rev. F. W. Hope, and three others in that of Mr. Children.

Sp. 3. *Pass. fasciata*. (Corp. long. .65 unc. lat. .2 unc.)

„ „ G. R. Gray, Translation of the Règne Animal of Cuvier by Griffith and others, Insecta, vol. ii. p. 93.

Parandra „ G. R. Gray, *loc. cit.* tab. lx. fig. 2. and tab. lxxv. fig. 1. anatomical detail.

Deep red, extremely glabrous; antennæ pitchy black; elytra red, with a sutural and marginal black longitudinal stripe on each; tibiæ black. In sculptural markings those given with the preceding species will nearly describe the present; the impression on the clypeus is less deep; the prothorax is more attenuated posteriorly, and the posterior angles are more prominently and acutely produced; exterior to the second furrow of each elytron is a very distinct longitudinal linear impression abbreviated at each end.

Inhabits the Island of Cuba. A single specimen is in the cabinet of the Rev. F. W. Hope, and two in that of Mr. Children.

GENUS HECTARTHURUM, *Newman*.

In habit resembling *Passandra*, but having the antennæ considerably shorter, moniliform, and more or less incrassated in the middle; the joints separately are shorter and more robust, often nearly circular, and the terminal joint is rarely larger, and in some species smaller than the rest; it is compressed and truncate. In one sex the antennæ are obviously incrassated in the middle, the sixth joint being the largest. The head has a deep transverse furrow, and two equally deep frontal longitudinal furrows, which unite with the transverse one. The tarsi are 5-jointed, the basal joint being shorter than the rest.

Sp. 1. *Hect. curtipes*. (Corp. long. .65 unc. ; lat. .325 unc.)

„ „ Newman, 'Entomological Magazine,' vol. v. p. 398.

Black shining, the abdomen, coxæ, femora, and a large oval spot near the apex of each elytron red. The head has a deep but diffuse transverse furrow posteriorly; at each posterior angle of the head this is joined by a shallow but clearly defined sinuous longitudinal marginal furrow, which originates at the base of the mandible and passes by the antennæ and above the eye; the clypeus has on each side an elongate tubercular elevation; again on each side beyond this is a vague longitudinal impression, which posteriorly assumes the character of a deep furrow, and these two unite with the great transverse furrow. The prothorax has an extremely slender posterior and lateral marginal ridge, also two impressed longitudinal dorsal furrows; these originate in the anterior margin, and proceed in a direct line one to each posterior angle. Each elytron has two deep longitudinal furrows; the first originates by the side of the scutellum and extends to the apex; the second originates dorsally, near the shoulder, and ceases considerably before the apex.

Inhabits Senegal. The specimen from which the description is taken I believe to be unique, in the cabinet of the Entomological Club.

Sp. 2. *Hect. gigas*.

Cucujus gigas, Fabricius, 'Syst. Eleu.,' vol. ii. p. 92.

"Body very large for the genus *Cucujus*, depressed, smooth, black and shining. The margin of the prothorax unarmed. Elytra glabrous, black, with two distant impressed furrows; and between these, towards the apex, a large red spot."—*Fab.*

"Inhabits Guinea. In the Museum of M. Sehestedt."—*Fab.* It is very evident that this resembles the previously described species, but the anomalous antennæ and the furrows of the prothorax could scarcely have escaped the careful eye of Fabricius.

Sp. 3. *Hect. brevifossum*. *Atra, glaberrima, abdomine pedibusque piceis: prothoracis striæ duæ laterales, singuli elytri tres, fossulaque brevissima antica inter primam et secundam.* (Corp. long. .7 unc. ; lat. .2 unc.)

Brilliantly shining black, the abdomen and legs inclining

to pitchy red. The head has an extremely deep transverse furrow, parallel to the anterior margin of the prothorax; at each extremity this is joined by a slight longitudinal marginal furrow, which passes above the antenna and eye; the clypeus has an oval impression, and behind it on each side is a very deep longitudinal furrow; these last unite with the great transverse furrow. The prothorax has a posterior and lateral slender marginal ridge; anteriorly this is angular, but not produced by the side of the head; posteriorly it is incrassated in the middle, and as it were turned back over the disk of the prothorax; on each side it has dorsally an obvious but not deep furrow, originating near the anterior margin, and terminating in the posterior angle. Each elytron has four furrows: the first originates by the side of the scutellum and terminates in the apical angle; the second is very short, scarcely a sixth of the entire length of the elytron, and situated near the anterior extremity of the third, which originates dorsally near the shoulder, and ceases considerably before reaching the apical angle; the fourth is equidistant from the third and the marginal ridge of the elytron; it is less deep than the others; it originates laterally, considerably below the shoulder, and surpasses the third, but still does not reach the apical angle.

Inhabits the island of Java. One example, from which the above description is taken, is in the cabinet of the Rev. F. W. Hope. A second is in the British Museum, but its habitat is unknown. A third, of much larger size than either of the foregoing, is in the cabinet of Mr. Children, and this last has the antennæ very much incrassated in the middle.

Sp. 4. Hect. trigeminum. *Atra nitida, femoribus piceis: prothoracis striæ duæ laterales, singuli elytri tres, quarum interna longior, intermedia brevior, externa mediocris.* (Long. corp. .75 unc.; lat. .2 unc.)

The colour is black and very shining; there is no trace of any other hue except in the femora, which incline to pitchy black. The head has a deep transverse furrow near its posterior margin; at each posterior angle of the head this is joined by a longitudinal marginal furrow, which originates near the base of the antenna, and passes above the eye; the clypeus has a diffuse oval impression, and on each side of this

commences a deep longitudinal furrow; these two unite with the great transverse furrow. The prothorax has a posterior and lateral marginal ridge; this, in the centre of the posterior margin, is incrassated, and as it were folded back on the disk: from each posterior angle of the prothorax arises a small keel-like ridge; this meets a longitudinal discoidal furrow, which, after nearly touching the anterior margin, turns inwards along the margin, and nearly unites with the corresponding furrow of the opposite side. Each elytron has three furrows; the first originates by the side of the scutellum and extends to the apical angle; the second dorsal, but distant from the first; it originates considerably below the basal margin and ceases as much before the apex; the third is near the second and extends beyond it at both ends.

There are two examples of this insect in the British Museum; from the largest of these, whose dimensions are given above, the description is taken; the second specimen agrees in every particular except that it is scarcely half the size. There is no record preserved of the habitat or donor.

Sp. 5. *Hect. heros*.

Cucujus heros, Fabricius. 'Syst. Eleu.,' vol. ii. p. 92.

"In habit and size this species resembles *Cucujus gigas*. The antennæ are short, stout, moniliform, and in one sex with the joints prominent beneath, serrated. The head has stout porrected mandibles and a bisulcated forehead; the prothorax is flat, black, and has a furrow on each side. The elytra are black, immaculate, and unequally striated. The body is black, the femora red."—*Fab. loc. cit.*

"Inhabits the island of Sumatra: in the museum of Mr. Lund."—*Fab.* This cannot, as I imagine, be identical with the preceding; the three obvious furrows on each elytron in *H. trigeminum* could scarcely be described as "elytra inæqualiter striata." The femora moreover are not red.

Sp. 6. *Hect. bistratum*. (Corp. long. .54 unc. lat. .14 unc.)

Passandra ,, Castelnau, 'Hist. Nat. des Animaux articulés,' Ins. vol. ii. p. 384.

Black and very shining, the abdomen and legs inclining to pitchy red. The form of this insect is linear and more cylindrical, the antennæ are moniliform and stout. The sculp-

ture of the head is precisely as in *H. trigeminum* above described, except that the impression on the clypeus is interrupted posteriorly by the anterior extremity of a raised glabrous elevation, which occurs between the two deep longitudinal furrows. The prothorax is precisely as in that species. Each elytron has two furrows; the first originates by the side of the scutellum and terminates in the apical angle; the second originates dorsally near the shoulder and ceases considerably before the apical angle; at the base of the elytra, equidistant from these striæ, is a deep puncture.

Inhabits the island of Java. I am indebted to the Rev. F. W. Hope and Mr. Shuckard, who possess the only examples I have seen, for the opportunity of describing this species.

Sp. 7. Hect. gemelliparum. *Nigra, nitida, abdomine pedibusque piceis: prothoracis striæ quatuor, duæ distantes laterales indistinctæ postice abbreviatæ, duæ approximata discoidales profundæ brevissimæ, posticæ; singuli elytri striæ quatuor pariter dispositæ.* (Corp. long. .6 unc. lat. .16 unc.)

Black and shining, the abdomen and legs inclining to pitchy red. The form linear and subcylindrical, the antennæ moniliform, the sculpture of the head as in *H. trigeminum*. The prothorax has a posterior and lateral marginal ridge, the posterior part incrassated, reflexed, and notched in the middle; on each side it has dorsally an obvious but not deep furrow, which reaches neither the anterior nor posterior margin: near the posterior margin, but not adjoining it, rise two deep abbreviated furrows; at the base they are nearly approximate, but diverge anteriorly and cease abruptly at the centre of the disk of the prothorax. Each elytron has four striæ in pairs; the first of these extends from the side of the scutellum to the apical angle; the second, approximate to the first, is considerably abbreviated at both extremities; the third distant from the second and equally abbreviated at both extremities; the fourth approximates to the third, which it surpasses at both extremities, but reaches neither the base nor apex of the elytron.

Inhabits Senegal. A single specimen above described is in the cabinet of the Rev. F. W. Hope; a second in that of Mr. Westwood, both obligingly lent me for description.

Sp. 8. Hect. semifuscum. *Caput et prothorax fusca, cætera obscure ferruginea; lineæ prothoracis duæ laterales, antice obsoletæ, discus complanatus, punctatus; singuli elytri striæ quatuor pariter dispositæ.* (Corp. long. .4 unc. lat. .08 unc.)

Head and prothorax dark brown, elytra, abdomen and legs ferruginous. The head is rugose; there is a very obvious impression on or rather behind the clypeus; the transverse and longitudinal furrows of the head are deep and very distinct; the antennæ are somewhat more slender, and the joints more elongate than in the others of this genus; the terminal joint is also much larger. The prothorax has a posterior and lateral marginal ridge, the posterior portion being incrassated, reflexed, and notched in the middle; on each side a line arises from the posterior angle, and proceeding upwards towards the anterior margin ceases at about half the length of the prothorax. Each elytron has four striæ in pairs; the first originates by the side of the scutellum and extends to the apical angle; the second, approximate to the first, is considerably abbreviated at each end; the third, distant from the second, is also abbreviated at each end, but extends rather below the second; the fourth approximates to the third, originates nearer the shoulder, and extends rather below it.

Habitat unknown. There is one specimen in the cabinet of the British Museum without record of its locality.

Sp. 9. *Hect. rufipenne.*

Cucujus rufipennis, Fab., 'Syst. Eleu.' ii. 93.

"Black, with the elytra alone ferruginous."—*Fab. loc. cit.*

"Inhabits the island of Sumatra. In the museum of M. Sehestedt."

The brief description of this species agrees tolerably well with *H. semifuscum*, but as it enters into no particulars whatever as to the sculpture, it would be inexcusable to conclude from so trivial a similarity as that of colour that the species were identical.

Genus CATOGENUS, *Westwood. Isonotus*, Perty. *Anisocerus*, Hope.

Antennæ moniliform and of equal thickness throughout. Head with two deep frontal longitudinal furrows which do not reach the transverse posterior furrow. The tarsi are very distinctly 5-jointed.

Sp. 1. *Cato. carinatus*. *Obscure ferruginea: prothorax crebre punctatus: singuli elytri striæ duæ, interstitiis punctis et quadrilineatis.* (Corp. long. .45 unc. lat. .075 unc.)

Entirely of a dusky ferruginous or pitchy red, not very shining. The form is depressed, linear, and very narrow. The antennæ are of nearly uniform substance, each joint externally incrassated; the terminal joint is slightly longer but not thicker than the rest. The head has a deep transverse furrow near its posterior margin; at each extremity this is joined by a lateral marginal furrow, which originates near the insertion of the mandible, and passes above the antenna and eye: in front of the transverse furrow, but quite unconnected with it, are two deep elongate impressions, and between these is a very slightly marked line, which proceeds from the middle of the transverse furrow to the clypeus, where it terminates in a circular impression. The prothorax has a very slender posterior and lateral marginal ridge. Each elytron has two furrows; the first originating on one side of the scutellum and terminating in the apical angle, the second originating dorsally near the shoulder and terminating considerably before the apical angle; the interstice between these furrows has four distinct lines, which become obliterated before the apex. The head, prothorax, and elytra are thickly punctured, the punctures on the elytra requiring a lens of high power.

Inhabits the Cape of Good Hope. I am indebted to the Rev. F. W. Hope for the loan of one specimen, and to Mr. Westwood for that of another. The name of *carinata*, Klug, has long been attached to this species, but I am not aware of a previous description. Specifically this is distinct from the following, but I can discover no characters of distinction of higher importance than those of sculpture, which so obviously mark the species throughout the family.

Sp. 2. *Cato. castaneus*. (Corp. long. .55 unc. lat. .125 unc.)

Isonotus castaneus, Perty, 'Animal. Artic. of Brazil.'

p. 114. tab. xxii. fig. 15.

Ferruginous, shining. Form less elongate than in *C. carinatus*, body scarcely so flat, and antennæ not so long in proportion to the body; the sculpture of the head exactly as in that species. Prothorax very shining, but under a lens of moderate power very obviously punctured; the disk is very flat

and has two obvious impressions. Each elytron has six furrows, united in pairs at the base; the fifth ceases at about half the length of the elytron; the sixth is rudimental only.

Inhabits Brazil. A single specimen is in the cabinet of the Rev. F. W. Hope, and three others in that of Mr. Children.

Sp. 3. *Cato. rufus*. (Corp. long. .475 unc. lat. .1 unc.)

„ *rufus*, Westwood, 'Zoological Journal,' vol. v. p. 215.

Sup. tab. xlvi. fig. 2.

Cucujus rufus, Fabricius, 'Entomologia Systematica,' Supp. p. 123. No. 2.

„ „ Fabricius, 'Systema Eleutheratorum,' vol. ii. p. 93.

This species so closely corresponds with the foregoing that I have considerable hesitation in considering them distinct. The present insect is rather less in size, rather less glabrous, and scarcely so broad in proportion to its length: there is again a difference of habitat, the *Cucujus rufus* of Fabricius inhabiting the United States, and the *Isonotus castaneus* of Perty inhabiting Brazil; and I may remark it is a circumstance of extremely rare occurrence that the same species is common to both countries. That the present insect is the *Cucujus rufus* of Fabricius appears pretty evident from that author's description, which I subjoin below. There is a specimen in the cabinet of the British Museum, a second in that of the Entomological Club (donor J. O. Westwood), and a third in that of Mr. Westwood, which is the identical specimen described by him in the 'Zoological Journal' as the type of his genus *Catogenus*, and which he has kindly placed in my hands for examination and description. It is useless to repeat the description already given with *C. castaneus*; the reader must refer to that species, notice the slight variation above alluded to, and add the following description from Fabricius in the 'Entomologia Systematica,' remembering also the different locality; a subject formerly so much neglected, that I find it a matter of difficulty to obtain the habitat of any rare species if it happen to boast of any antiquity.

Description of Cucujus rufus by Fabricius.

“ *Cucujus depressus*, rufus, elytris striatis.

“ Habitat in Carolina Dom. Bosc.

